

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method for detecting determining the presence absence of a residual amount of corrosion inhibitor on a copper surface subjected to a cleaning solution containing a corrosion inhibitor comprising exposing said copper surface to a reactant that will attack reacts with copper on said copper surface causing to cause a pronounced visible color change of said copper surface, when the copper surface is void of said color change indicating an absence of said residual corrosion inhibitor on said copper surface.

2. (Previously Presented) A method according to claim 1 including using a gaseous reactant.

3. (Previously Presented) A method according to claim 2 including exposing said copper surface to hydrogen sulfide gas.

4. (Currently Amended) A method according to claim 23 further comprising the step of forming the hydrogen including introducing acetic acid into a solution of sodium sulfide gas by introducing acetic acid into a solution of sodium sulfide in deionized water at room temperature to generate hydrogen sulfide gas as said reactant.

5. (Currently Amended) A method for determining the presence absence of residual corrosion inhibitor on copper surfaces or copper components of a microelectronic device or microelectronic devices having been subjected to a cleaning prior to a subsequent fabrication operation comprising:

including a sacrificial copper coupon or test piece in a group or batch of said devices during said cleaning process;

removing said test piece from said batch and exposing said test piece to a gaseous-reactant selected to react with said test piece to produce a visible color change of a surface of said test piece in the absence of corrosion inhibitor on said surface of said test piece.

6. (Currently Amended) A method according to claim 5 including using ~~hydrogen sulfide as said~~ a gaseous reactant.

7. (Currently Amended) A method according to claim 613, including producing said hydrogen sulfide gas by reacting acetic acid with an aqueous solution of sodium sulfide.

8. (Withdrawn) An apparatus for detecting the presence of a residual amount of corrosion inhibitor on a copper surface subjected to a cleaning solution containing a corrosion inhibitor comprising in combination:

a first receptacle adapted to receive a test piece or pieces that have been exposed to cleaning solution,

a second receptacle placed inside said first receptacle proximate and said test pieces, said second receptacle adapted to receive reactants to produce a hydrogen sulfide gas; and

means to cover said first receptacle and direct said hydrogen sulfide gas at said test piece or pieces.

9. (Withdrawn) An apparatus according to claim 1 including sodium sulfide solution in said second receptacle.

10. (Withdrawn) An apparatus according to claim 9 including means to introduce an acid into said second receptacle prior to covering said first receptacle.

11. (New) A method for determining the absence of a residual amount of corrosion inhibitor on a copper surface subjected to a cleaning solution containing a corrosion inhibitor comprising the steps of:

cleaning said copper surface with said cleaning solution containing said corrosion inhibitor;

rinsing said cleaned copper surface;

exposing said rinsed copper surface to a reactant that reacts with said copper surface devoid of residual corrosion inhibitor causing a visible color change to said copper surface devoid of said residual corrosion inhibitor, wherein said color change indicates an absence of said corrosion inhibitor on said copper surface.

12. (New) A method for determining the absence of residual corrosion inhibitor on copper surfaces or copper components of microelectronic devices having been subjected to a cleaning solution prior to a subsequent fabrication operation comprising the steps of:

including a sacrificial copper coupon or test piece in a group or batch of said devices during said cleaning process;

cleaning said group or batch and said sacrificial copper coupon or test piece;

removing said sacrificial copper coupon or test piece from said group or batch of said microelectronic devices; and

exposing said sacrificial copper coupon or test piece to a gaseous reactant selected to react with said sacrificial copper coupon or test piece to produce a visible color change on a surface said sacrificial copper coupon or test piece devoid of said corrosion inhibitor on said surface of said sacrificial copper coupon or test piece.

13. (New) A method according to claim 6, wherein said gaseous reactant is hydrogen sulfide gas.

14. (New) A method for determining the absence of residual corrosion inhibitor on a copper surface or copper components of a microelectronic device having been subjected to a cleaning operation comprising, including a sacrificial copper test piece in a group or batch of the devices during the cleaning operation, removing the test piece from the batch after the cleaning step is completed and exposing the test piece to a reactant selected to react with the test piece to produce a visible color change on the surface of the test piece, wherein the color change of the surface indicates presence or absence of a residual corrosion inhibitor on the test piece and the components being processed.